

## **Abstract**

A wavelength division multiplexed device is based on a transmission grating spectrometer having at least two diffractive optical elements. The WDM  
5 device provides flexible use and may be widely applied in WDM systems. The device is useful for multiplexing and demultiplexing, channel monitoring, for adding and dropping channels, and for controlling the power in individual channels within a multiple channel signal. The device provides for dynamic control of individual channels, and may be advantageous in use as a gain  
10 flattening filter.